**Foundations of Mathematics 11**

**Unit Plan**

**Unit 1**

Chapter 1 Inductive and Deductive Reasoning

1.1 Making Conjectures: Inductive reasoning

1.2 Exploring the Validity of Conjectures

1.3 Using Reasoning to Find a Counterexample to a Conjecture

1.4 Proving Conjectures - Deductive Reasoning

1.5 Proofs that are not valid

1.6 Reasoning to Solve Problems

1.7 Analyzing Puzzles and games

Chapter 2 Properties of Angles and Triangles

2.1 Exploring Parallel lines

2.2 Angles Formed by Parallel Lines

2.3 Angle Properties in Triangles

2.4 Angle Properties in Polygons

**Time Line 3-weeks**

**Assessment**

**Unit 2**

Chapter 3 Acute Triangle Trigonometry

3.1 Exploring side-Angle Relationships in Acute triangles

3.2 Proving and exploring the Sine Law

3.3 Proving and Applying the Cos Law

3.4 Solving Problems Using Acute Triangles

Chapter 4 Oblique Triangle Trigonometry

4.1 Exploring the Primary Trigonometric Ratios of Obtuse Angles

4.2 Proving and Applying the sine and cosine Laws for Obtuse Triangles

4.3 The Ambiguous Case of the Sine Law

4.4 Solving Problems Using Obtuse Triangles

**Time Line 4-weeks**

**Assessment**

**Unit 3**

Chapter 5 System of Linear Inequalities

5.1 Graphing Linear Inequality in Two variables

5.2 Exploring Graphing of System of Linear Inequality

5.3 Graphing to Solve systems of Linear Inequalities

5.4 Optimization Problems I: Creating the Model

5.5 Optimization Problems II: Exploring Solutions

5.6 Optimization Problems III: Linear Programming

**Time Line 4-weeks**

**Assessment**

**Unit 4**

Chapter 6 Quadratic Functions

6.1 Exploring Quadratic Relationships

6.2 Properties of graphs of Quadratic Functions

6.3 Solving Quadratic equation by Graphing

6.4 Factored form of a Quadratic

6.5 Solving Quadratic equation by factoring

6.6 Vertex form of a Quadratic Function

6.7 Solving quadratic equation using the quadratic Formula

6.8 Solving Problems Using Quadratic Models

**Time Line 5-weeks**

**Assessment**

**Unit 5**

Chapter 8 Financial Mathematics: Investing Money

8.1 Simple Interest

8.2 Exploring Compound Interest

8.3 Compound Interest: Future Value

8.4 Compound Interest: Present Value

8.5 Investments Involving Regular Payments

8.6 Solving Investment Portfolio Problems

Chapter 9 Financial Mathematics: Borrowing Money

9.1 Analyzing Loans

9.2 Exploring Credit card use

9.3 Solving Problems Involving Credit

9.4 Rent Lease or Buy

**Time Line 3-weeks**

**Assessment**